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ABSTRACT

Tech prep plays a pivotal role in the education reform movement and is a key educational strategy. The purpose of tech prep education is to prepare an academically and technically competent work force. It is a curricular and instructional strategy for all students that leads to competence and employability in the technical fields. In tech prep, all students are exposed to career awareness at the earliest grades, followed by career exploration and preparation in high school, to develop the skills students need to make informed decisions. All graduates of tech prep must be broadly educated with a solid foundation in math and science, specialized training, and academic preparation in a technical field. Tech prep extends beyond narrowly defined occupational clusters; it is about increasing options. Tech prep is a key strategy for building a school-to-work (STW) system and is often the crucial centerpiece of many STW systems. It promotes key STW elements: career exploration, integration of vocational and academic education, career pathways, secondary and postsecondary linkages, and staff development. Therefore, tech prep and the STW initiative complement each other. Tech prep's mission is to provide, through a commitment by secondary and postsecondary institutions as well as employers, a seamless course of study for all students, offering career options/pathways to ensure a technologically competent work force. (Contains 23 references.) (YLB)

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U.S. DEPARTMENT OF EDUCATION
OFFICE OF VOCATIONAL AND ADULT EDUCATION
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TECH PREP
CONCEPT PAPER

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I. BACKGROUND

History of Tech Prep

Tech Prep as pivotal to the education reform movement in the United States.

In the late 1960s, as part of an effort to improve vocational education, a number of states made changes to their vocational programs to strengthen articulation between high schools and community colleges. This trend continued throughout the 1970s, with states placing high priority on articulating curriculum as well as on connecting courses and programs between secondary and postsecondary educational levels. The 1972 federal amendments to vocational education added yet another dimension by promoting the articulation of vocational and academic education. The Education Amendments of 1976 also supported the articulation of secondary and postsecondary programs by reinforcing the important role that community colleges play in delivering technical training and retraining. "In addition, other components that had been emerging somewhat independently such as applied academics and career counseling began to be unified in an initiative called technical preparation or simply Tech Prep" (Bragg, Kirby, Puckett, Trinkle, & Watkins, 1994b, p.5).

In 1983, the National Commission on Secondary Vocational Education was formed to examine the role and function of secondary vocational education. In its report, **The Unfinished Agenda**, the Commission recommended that states implement secondary and postsecondary articulation and curriculum coordination across academic and vocational education (The National Commission on Secondary Vocational Education, 1984, p.24).

One of the most influential contributions to the Tech Prep movement came from Dale Parnell's book, **The Neglected Majority**, published in 1985. In it, Parnell proposed increasing secondary and postsecondary program cooperation and coordination by providing a vision and conceptual framework for the 2+2 Tech Prep Associate Degree (TPAD) model. In 1991, Parnell and Dan Hull elaborated on the TPAD model in their book, the **Tech Prep Associate Degree: A Win/Win Experience.** This book promoted the concepts of (a) applied academics as the

basis for a curriculum and (b) Tech Prep as the substitute for the general education track in comprehensive high schools. These concepts were a turning point, making Tech Prep a valid and significant technical education reform effort. "Their ideas had an unmistakable impact on the development of new Federal Tech Prep policy at the beginning of the decade of the 1990s..." (Bragg et al., 1994b, p.7).

At the same time, some states began focusing on Parnell's 2+2 model and developed Tech Prep programs. These included the Partnership for Academic and Career Education (PACE) in South Carolina, the Mt. Hood Regional Cooperative Consortium in Oregon, and the Tech Prep Associate Degree Consortium in Rhode Island.

As alluded to earlier, "... in the decade of the 1990s, the federal government stepped forward as a strong supporter of Tech Prep with the passage of the Carl D. Perkins Vocational and Applied Technology Education Act of 1990" (Bragg et al., 1994b, p.7). The creation and substantial growth of the National Tech Prep Network, the establishment of a Tech Prep membership group within the American Vocational Association, and the passage of the School-to-Work Opportunities Act (STWOA) in 1994 are all indicators of the strong support and growth of Tech Prep over the last decade. In essence, Tech Prep became **pivotal to the education reform movement**, especially vocational education, in the United States by formally linking secondary and postsecondary academic and occupational curricula.

Purpose of the Concept Paper

Providing direction for systemic educational reform

Tech Prep is not a fad. It is an innovative, exciting and challenging educational approach that has the potential to effect long-term educational change. Because of this key role, Tech Prep warrants a closer look. Its future direction in ensuring quality learning opportunities for all students through school-to-work systems is of utmost importance to ongoing education reform efforts.

Our first formal attempt to gather views and opinions on the status of Tech Prep

took place in September 1994 when the U.S. Department of Education (ED) convened a group of Tech Prep practitioners and researchers to discuss three major issues:

(1) the status of Tech Prep development,
(2) the needed changes in Tech Prep strategies, and
(3) the needed changes in federal legislation.

This focus group helped ED to: (a) identify ways of clarifying the definition and expected outcomes of Tech Prep, (b) communicate the goals of Tech Prep to the states more effectively, and (c) coordinate the aims of Tech Prep with the objectives of other federal education reform efforts such as School-to-Work, Goals 2000, and Improving America's Schools. As part of its national evaluation of Tech Prep, Mathematica Policy Research, Inc. gathered in 1993 state definitions of Tech Prep. The findings indicate that even though a number of states use the Perkins Act definition, the definition statements are quite diverse in their level of specificity. Some states include outcomes; others include features of the program; and still others include who should be considered a Tech Prep student. Even though most recent evidence suggests progress in Tech Prep definition and participation, it still remains a challenge (Silverberg, 1996a, p.8). These findings reflect a certain degree of confusion and uncertainty that still prevails around the country.

Extensive studies and program evaluation reviews by Mathematica and the National Center for Research in Vocational Education (NCRVE), and our own experience and knowledge of Tech Prep, have led us to conclude that there are a number of unresolved implementation issues. This concept paper grew out of such issues as: (1) a consistent definition of Tech Prep, (2) a clear conceptual framework, and (3) a clear vision for Tech Prep. For each issue, this paper addresses our thoughts, research findings, and possible approaches to providing a conceptual foundation upon which to design, implement, and evaluate Tech Prep education. The discussion also includes future implications.

This concept paper is aimed at policy makers, administrators, practitioners, and those interested in systemic education reform. The paper provides the basis from which to build effective Tech Prep initiatives. By providing a foundation, we believe we are **providing direction for systemic educational reform.** Our

ongoing effort to expand and improve Tech Prep education nationally is now more vital than ever.

To summarize, this concept paper focuses on three major issues:

(1) Tech Prep Definition and Target Population
(2) Conceptual Foundation of Tech Prep
(3) Future of Tech Prep

II. ISSUES

ISSUE # 1 - Definition and Target Population

Tech Prep as a curricular and instructional strategy for all students.

The final report of the National Assessment of Vocational Education states that "the definition of tech-prep students, like that of programs, can also be problematic" (Boesel, 1994, p.117). To answer the "what and who" of Tech Prep, we must look at the purpose and the target population of Tech Prep education. Once we do this we will provide a more consistent definition of Tech Prep as well as identify for whom Tech Prep is intended.

In a broader sense, the purpose of Tech Prep education is to prepare an academically and technically competent workforce. This workforce must be prepared to adapt to rapid technological changes in the competitive workplace and to pursue lifelong learning. How then is Tech Prep different from other educational strategies? Let us take a look at its unique features:

(1) a planned, non-duplicative sequence of study in a technical field leading to an associate degree or certificate

(2) an articulated secondary-postsecondary career pathway tied to the evolving workplace

(3) an applied/integrated academic and technical/occupational curriculum

(4) a rigorous set of high academic and occupational skills standards for students.

In a more practical sense, we may then ask, Is Tech Prep's sole purpose to grant a two-year degree or certificate? Is it workforce readiness or advanced technical preparation? Is it both competence and employability? As we try to define Tech Prep's purpose, it is helpful to look at outcomes, and what we expect students to get from participating in Tech Prep. We expect students:

(1) to be technically prepared

(2) to be competent in math, science, communications and technologies

(3) to earn an associate degree or a certificate

(4) to find high wage, high skill employment.

What is Tech Prep?

Tech Prep is a curricular and instructional strategy for all students that leads to competence and employability in the technical fields.

Tech Prep opens doors to students by providing them with an occupational focus and a very clearly defined curriculum path leading to productive employment in a highly skilled technical career. To achieve this, Tech Prep must go hand-in-hand with effective career planning.

In response to **Who is Tech Prep for?** we turn our attention to Tech Prep's target population. Is Tech Prep for the "neglected majority"? for the gifted and talented? Is it for vocational students, for special populations, or for all students? According to a 1993 NCRVE survey of Tech Prep coordinators, the "neglected majority," or the 25th-75th class-rank percentile, is most often the target group.

However, we see Tech Prep as an inclusive reform strategy that applies ultimately to all students. Tech Prep, as a change agent of educational reform, needs to affect a wide range of students, not just a narrow segment. The term **all** means just that, each and everyone -- thus abandoning the tradition of separating by category of students.

Key players such as teachers, counselors, administrators, employers, parents, and secondary and postsecondary institutions contribute to making students' career dreams become a reality. It is especially crucial that counselors use career planners with **all** students to provide focus and direction. The collaborative efforts of schools, businesses and communities are essential and need to be reinforced at the local level. There are benefits to be gained by everyone -- especially as students become productive workers and citizens, and as employers begin to hire competent, well-prepared employees.

Who is Tech Prep for?

Tech Prep is for all students, for each and every one.

We believe that **all** students are capable of meeting challenging standards with the support of schools, businesses and communities.

ISSUE # 2 - Conceptual Foundation of Tech Prep

Tech Prep rests on broad-based systemic education reform.

To address this issue we look at the "program" versus "systemic reform" dilemma. Tech Prep is not a program. Tech Prep is broad-based systemic reform -- it extends beyond a mere sequence of courses and common activities that students engage in. This comprehensive reform effort is intended ultimately to affect **all** students and entire school systems. Evaluation results indicate that Tech Prep sites such as Salem (OR), Fresno (CA), Dothan (AL), and East Peoria (IL) adopted Tech Prep as a reform concept, not a program (Hershey, Silverberg, Owens,1995,

pp.6,8). To meet the need for fundamental change in American education, we must view Tech Prep within the larger picture of school reform.

During our 1994 focus group meeting, a participant suggested that we view Tech Prep "... as a broad program for earlier grade levels and a more focused one for later grades" (Hershey, 1994, p.14). Some supporters believe this broad-based approach in the earlier grades and a narrower approach in later grades is more feasible and practical. While the approach is more practical, it does not affect **all students and entire school systems.** In Tech Prep we want to see students exposed to career awareness at the earliest grades, followed by career exploration and preparation in high school, to develop the skills students need to make informed decisions. We believe that **all** graduates of Tech Prep must be broadly-educated with a solid foundation in math and science, specialized training, and academic preparation in a technical field.

Again, Tech Prep extends beyond narrowly defined occupational clusters. Tech Prep is about increasing options. Focusing exclusively on selected occupations is too restrictive and does not allow for true career planning. Students need greater exposure to the world of work in order to match their interests, abilities, and skills to careers. We are aware that by making Tech Prep all inclusive and avoiding specific occupations we are making accountability difficult. It is easier to count and track students in discrete programs. Presently, consortias' reporting capacity has expanded even though it is not true of all member districts (Silverberg, 1996a, p. 45). However, the pay-off is greater when we have all students participating in a myriad of career clusters.

All students need to identify a cluster of courses they are interested in and focus on one of many career clusters. The advantage of using career clusters is that students are introduced to a variety of occupations that have common job duties and characteristics and whose workers have similar interests and abilities. It is important to point out that career choices are tentative, therefore, students may change their minds and transfer into another cluster.

It is crucial that Tech Prep leaders, practitioners, policy makers and others understand Tech Prep's true potential for effecting long-term educational and organizational change in order to guide its design, implementation, and evaluation.

It is important for Tech Prep leaders to know how to incorporate Tech Prep into the state's comprehensive plan for education reform. Connecting and bringing together various components of the education system into a holistic unit, a comprehensive system, will make this education reform initiative truly effective.

In implementing systemic education reform, we travel a difficult road. As alluded to earlier, "systemic" change brings with it issues such as accountability, which we may not be ready to handle. "Systemic" change calls for creativity, flexibility, and proactivity. We support these elements of "systemic" change but not at the expense of diffusing reform efforts -- a noteworthy and fine distinction.

What is the Conceptual Foundation of Tech Prep?

The conceptual foundation of Tech Prep rests on broad-based systemic education reform.

Tech Prep is an education reform strategy. Tech Prep cannot be viewed as an updated and revised vocational education program, or as a narrowly defined program focusing on technical careers. Nor is Tech Prep a third track for students to follow. Tech Prep is synonymous with systemic reform. While not necessarily a quick or easy approach, its potential impact is beyond measure.

ISSUE # 3 - Future of Tech Prep

Tech Prep has a bright and challenging future.

Predicting the future of Tech Prep brings to mind the words of Cicero: "I do not know how one soothsayer can look upon another soothsayer without laughing." Which is to say, who can predict the future? When Congress threatened the Administration's fiscal year 1995 budget, the public's eager defense and support of Tech Prep led to the restoration of the appropriation for Tech Prep. A recent Mathematica report supports our belief that Tech Prep initiatives play a key role in building school-to-work systems (Silverberg, 1996b, pp. 5,7). These actions lead

one to believe that Tech Prep has a bright and challenging future.

Tech Prep has shown phenomenal growth since the enactment of the 1990 Perkins Act. Between 1993 and 1994, the number of Tech Prep consortia surveyed by Mathematica grew from 812 to 972; the number of Tech Prep high school graduates grew from 12,265 to 43,623; and the number of Tech Prep students entering college grew from 3,645 to 14,509 (Silverberg, 1996a, p.41).

Based on current trends such as those documented by NCRVE in the report, **Tech Prep Implementation in the United States: Promising Trends and Lingering Challenges**, Tech Prep appears to have a bright future. Nationwide, NCRVE reports, as many as 50 percent of secondary schools and over 75 percent of postsecondary schools have participated in a consortium. In 1992-93, a typical local consortium consisted of 12 secondary schools and two postsecondary schools as well as 10 private sector business and industry firms.

Tech Prep is well established at the local level and also has enthusiastic state support. As an example of the effectiveness of Tech Prep at the local level, North Carolina's Richmond County Schools' Tech Prep Program is credited with lowering the dropout rate from 7.2 percent in 1985-86 to 2.9 percent in 1991-92. Another example is Ohio's Miami Valley Tech Prep Consortium where 86 percent of the 1995 Tech Prep high school graduates matriculated into associate degree programs at Sinclair Community College. In addition to documented effectiveness, Tech Prep also garners Federal financial support from the Perkins Act and the STWOA.

The STWOA supports the development of flexible school-to-work systems that prepare all young people for career employment, further education and lifelong learning. Every school-to-work system contains three core elements: (1) school-based learning, (2) work-based learning, and (3) connecting activities. Connecting activities include, but are not limited to, courses that integrate classroom and on-the-job instruction, matching students with employers, and training job-site mentors.

Tech Prep is a key strategy for building a school-to-work system and is often the crucial centerpiece of many school-to-work systems. Tech Prep promotes key school-to-work elements: career exploration, integration of vocational and

academic education, career "pathways", secondary and postsecondary linkages, and staff development. Therefore, Tech Prep and school-to-work systems are not mutually exclusive, nor should they be competitive. Actually, both initiatives complement each other. School-to-work systems are an umbrella under which Tech Prep, Career Academies, Youth Apprenticeship, and Cooperative Education gather. Or, school-to-work might be envisioned as a tree trunk with branches such as Tech Prep growing from it. The STWOA encourages extending or enhancing existing programs.

Tech Prep and school-to-work are also philosophically compatible. Both initiatives strive to prepare people for lifelong learning, high wage employment, and responsible citizenship. A recent Mathematica report describes how Tech Prep consortia are already implementing program features envisioned in the STWOA (Silverberg, 1996b, p. 5).

There is a great deal of uncertainty in the field regarding Tech Prep's future because of Congress' interest in consolidating federal programs. Proposed block grants to the states are causing a high degree of anxiety over loosing Tech Prep as a key reform strategy. We believe that the concepts underlying Tech Prep are here to stay and its impact is to continue no matter what direction the funding takes in the near future.

Any new legislation is likely to include the same concepts and characteristics that have made Tech Prep strong:

(1) linking secondary and postsecondary education in a nonduplicative sequential course of study
(2) integration of academic and vocational technical education
(3) state leadership activities, including curriculum development and professional/staff development
(4) student competence in mathematics, science, communications and technologies through applied academics and integrated instruction
(5) accountability through evaluation and performance standards and measures
(6) career exploration, guidance and counseling.

Tech Prep's future is bright: Tech Prep has local, state and federal support. Tech Prep is a viable solution to preparing youth for successful careers. By improving

the implementation of its core elements and expanding intensive workplace experiences for all students, we have a winner in education! Tech Prep has access to funding. Its practitioners are creative and energetic. As it has in Richmond County, the American public is ready for educational reform to succeed.

III. SUMMARY AND CONCLUSIONS

We have discussed Tech Prep's pivotal role in the education reform movement and have highlighted its importance as a key educational strategy. Research indicates that Tech Prep's growth has been phenomenal, especially in terms of increased numbers of consortia and students. There is clearly support for Tech Prep from policy makers, practitioners and students.

Although Tech Prep continues to grow and is a key approach in vocational technical education and school-to-work, it appears that Tech Prep's definition, intended audience, and conceptual framework need clarification. However, there seems to be agreement that Tech Prep is a vehicle for providing **all** students with broad occupational education and a solid academic foundation, as well as offering them a greater number of career options.

To realize fully the potential of Tech Prep in affecting long-term educational change, we must view Tech Prep within the larger picture of school reform. We must regard Tech Prep as an innovative educational strategy, not a program.

In attempting to guide the future direction of Tech Prep and ensure quality learning opportunities for **all** students, we must determine needed changes, both strategic and legislative, to improve Tech Prep. Important to this is identifying specific ways -- there is no single solution -- of providing technical assistance to states, especially as it relates to integrating state efforts with federal initiatives such as Goals 2000, School-to-Work, and Improving America's Schools. Bridging various program components is pivotal to attaining effective teaching and learning.

The role of key players -- teachers, counselors, administrators, students, parents, and business/community representatives -- is more important than ever. There are

benefits to be gained by everyone -- especially as students become productive workers and citizens, and as employers begin to hire competent, well-prepared employees.

We must take the "road less traveled" -- one filled with uncertainty but much promise -- in implementing systemic educational change. In doing so, Tech Prep has a better chance of being institutionalized.

As a coda to our concept paper, we offer a vision and mission statement for Tech Prep with the belief that this will contribute to the expansion and improvement of Tech Prep nationally.

VISION OF TECH PREP

Tech Prep is a primary strategy for systemic educational change whereby teachers, counselors, administrators, and students, at both the secondary and postsecondary levels, as well as parents and business/community representatives, work in tandem and altruistically, to provide all students with broad occupational and solid academic skills in order to compete successfully in a competitive workforce.

MISSION STATEMENT FOR TECH PREP

Tech Prep provides, through a commitment by secondary and postsecondary institutions, as well as employers, a seamless course of study for all students, offering career options/pathways to assure a technologically competent workforce.

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